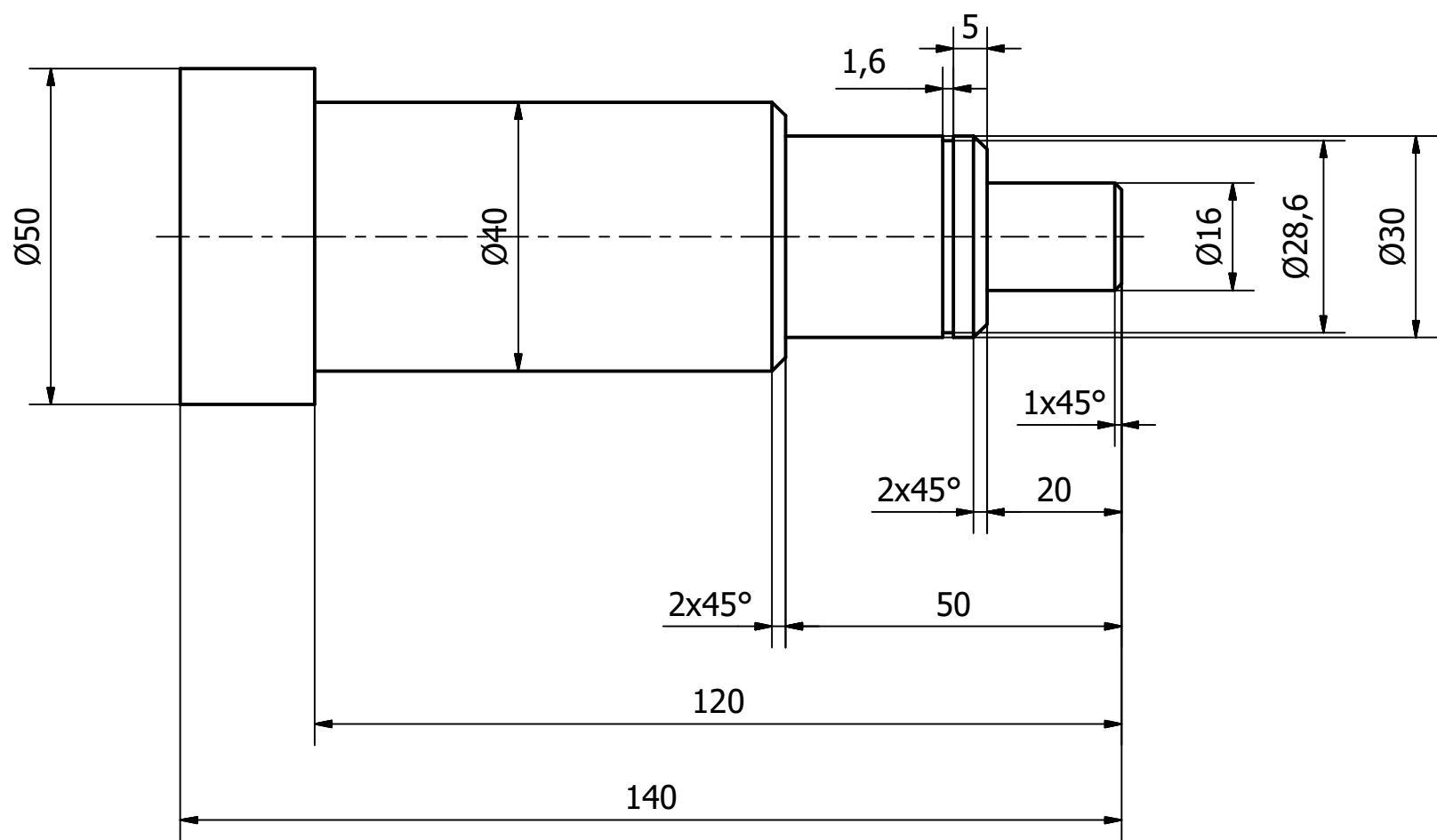


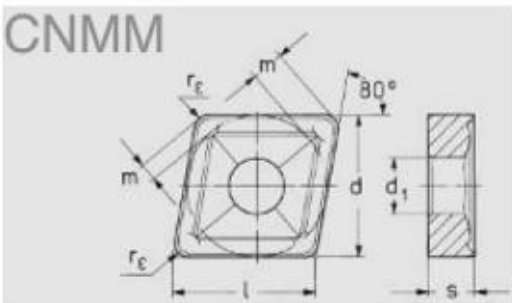
Ćwiczenie 5. Obróbka wałka wielostopniowego  
Wałek A



**Zadanie:** Wykonać obróbkę wałka stopniowanego zgodnie z powyższym rysunkiem.

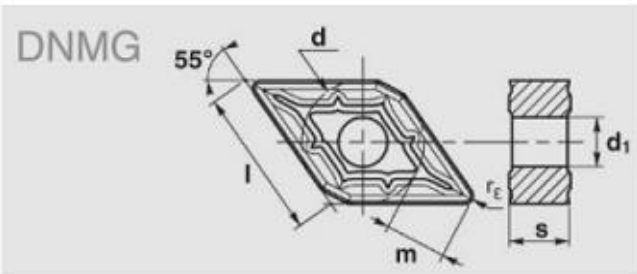
- obróbka zgrubna: płytka CNMM; parametry:  $a_{p \max} = 1,5 \text{ mm}$ ,  $V_c = 160 \text{ m/min}$ ,  $f_n = 0,2 \text{ mm/obr}$

| CNMM                                                                               |    | Oznaczenie  | l<br>(mm) | d<br>(mm) | s<br>(mm) | r <sub>ε</sub><br>(mm) | d <sub>1</sub><br>(mm) | m<br>(mm) | m <sub>1</sub><br>(mm) |
|------------------------------------------------------------------------------------|----|-------------|-----------|-----------|-----------|------------------------|------------------------|-----------|------------------------|
|  | 12 | CNMM 120408 | 12,9      | 12,70     | 4,76      | 0,8                    | 5,16                   | 3,088     | 1,697                  |
|                                                                                    |    | CNMM 120412 | 12,9      | 12,70     | 4,76      | 1,2                    | 5,16                   | 2,867     | 1,576                  |
|                                                                                    | 19 | CNMM 190612 | 19,3      | 19,05     | 6,35      | 1,2                    | 7,93                   | 4,632     | 2,545                  |



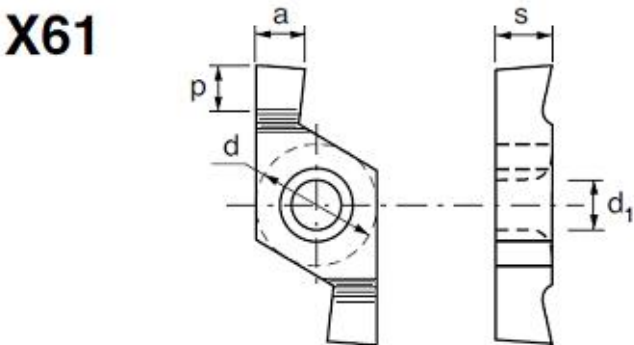
- obróbka wykańczająca: płytka DNMG; parametry:  $a_{p \max} = 0,6 \text{ mm}$ ,  $V_c = 160 \text{ m/min}$ ,  $f_n = 0,09 \text{ mm/obr}$

| DNMG                                                                               |    | Oznaczenie     | l<br>(mm) | d<br>(mm) | s<br>(mm) | r <sub>ε</sub><br>(mm) | d <sub>1</sub><br>(mm) | m<br>(mm) |
|------------------------------------------------------------------------------------|----|----------------|-----------|-----------|-----------|------------------------|------------------------|-----------|
|  | 15 | DNMG 150604-PC | 15,5      | 12,70     | 6,35      | 0,4                    | 5,16                   | 6,939     |
|                                                                                    |    | DNMG 150608-PC | 15,5      | 12,70     | 6,35      | 0,8                    | 5,16                   | 6,477     |
|                                                                                    |    | DNMG 150612-PC | 15,5      | 12,70     | 6,35      | 1,2                    | 5,16                   | 6,014     |



- rowek:  $V_c = 90 \text{ m/min}$ ,  $f_n = 0,06 \text{ mm/obr}$

| X61                                                                                 |    | Oznaczenie<br>Designation | d<br>(mm) | s<br>(mm) | d <sub>1</sub><br>(mm) | a<br>(mm) | p<br>(mm) |
|-------------------------------------------------------------------------------------|----|---------------------------|-----------|-----------|------------------------|-----------|-----------|
|  | 06 | X61 0602-110 L            | 6,35      | 2,38      | 2,8                    | 1,10      | 1,2       |
|                                                                                     |    | X61 0602-130 L            | 6,35      | 2,38      | 2,8                    | 1,30      | 1,2       |
|                                                                                     |    | X61 0602-160 L            | 6,35      | 2,38      | 2,8                    | 1,60      | 1,2       |
|                                                                                     |    | X61 0602-185 L            | 6,35      | 2,38      | 2,8                    | 1,85      | 1,2       |
|                                                                                     |    | X61 0602-215 L            | 6,35      | 2,38      | 2,8                    | 2,15      | 1,2       |



|                        |                  |                    |      |  |            |        |
|------------------------|------------------|--------------------|------|--|------------|--------|
| Zaprojektowany przez   | Sprawdzony przez | Zatwierdzony przez | Data |  | Data       |        |
|                        |                  |                    |      |  | 2016-04-25 |        |
| POLITECHNIKA POZNAŃSKA |                  |                    |      |  | Wydanie    | Arkusz |
|                        |                  |                    |      |  |            | 1 / 2  |